

IN THE CLAIMS:

Cancel Claims 31, 59, 152, and 155.

Claims 6, 11, 15, 24, 25, 29, 32 through 34, 38, 44 through 46, 58, 82 and 153 have been amended in accordance with 37 CFR 1.173(d) as follows herein..

Add new Claims 159 through 164 as follows herein after amended Claim 154.

6. (twice amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;

one of said printing stations comprising a first offset flexographic printing station for printing an aqueous-based vehicle image using the flexographic process to form a metallic coating on said substrate;

a suspended metallic material being included in said aqueous-based vehicle image; [and]

a dryer disposed downstream of said first flexographic printing station in the direction of movement of said substrate with respect to said printing stations for treating said aqueous-based vehicle image; and

at least one of the successive printing stations comprising an offset lithographic printing station downstream of said dryer for printing a color image over the aqueous-based vehicle image using the offset lithographic process in said continuous in-line process.

11. (amended) Apparatus as in claim 10 further including:

said first flexographic printing station including a plate cylinder, a blanket cylinder, and an impression cylinder;

a flexographic plate on said plate cylinder;

an anilox roller associated with said flexographic plate for supplying a first color to said flexographic plate to form said first color image; and

said blanket cylinder receiving said first color image from said plate cylinder and transferring said first color image to [said impression cylinder for printing on] said substrate.

15. (three times amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process, said printing stations including both lithographic and flexographic printing stations;

one of said printing stations comprising a first flexographic printing station;

one of said printing stations comprising a first lithographic printing station;

a blanket cylinder at [at least a first one of] said first flexographic printing station [stations];

an impression cylinder associated with said first flexographic printing station;

flexographic ink-providing means at said [at least] first [one of said] flexographic printing station [stations] for applying a flexographic ink to said blanket cylinder to form an image;

a substrate for receiving said flexographic ink image transferred from said blanket cylinder; [and]

[at least one subsequent] a second lithographic printing station in said in-line process for receiving said [image printed] substrate and printing an additional colored ink image on said substrate on top of said flexographic ink image using offset lithography; and

a second flexographic printing station.

24. (amended) Apparatus as in claim 17 wherein [at least one of] said first flexographic printing [stations] station prints said flexographic color ink image with liquid vehicle slurry containing an encapsulated essence.

25. (amended) Apparatus as in claim 17 wherein [at least one of] said first flexographic printing [stations] station prints said flexographic color ink image with a water-based liquid vehicle containing suspended particles.

29. (twice amended) A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

providing a plurality of successive lithographic/flexographic printing stations for printing colored ink images on a substrate;

printing a flexographic ink image on said substrate at least at a first [one of said] flexographic [stations] printing station;

transferring said [printed] substrate to at least one subsequent lithographic printing station in said continuous in-line process; [and]

printing colored ink images on top of said flexographic ink image at [at least one of] said subsequent lithographic printing [stations] station with an offset lithographic process; and
printing a coating on said substrate over said ink images at a second flexographic printing station.

32. (amended) A method as in claim 29 wherein said [colored inks forming said] colored ink images are printed with waterless colored inks.

33. (amended) A method as in claim 29 wherein said [colored inks forming said] colored ink images are printed with colored ink in a solvent-based liquid vehicle.

34. (amended) A method as in claim 29 further including the steps of:

printing a slurry on said substrate at any of said printing stations in said continuous in-line process;

using an encapsulated essence in said slurry; and

printing [an overcoating] said coating over said slurry [at a subsequent printing station in said in-line process] to protect said essence.

38. (twice amended) A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

printing an aqueous-based vehicle image having suspended particles therein on a substrate at a first flexographic printing station;

transferring said image printed substrate to [at least one additional] a subsequent printing station in said continuous in-line process; [and]

printing additional colored ink images on said printed substrate over said aqueous-based vehicle image in an offset lithographic process at said [at least one additional] subsequent printing station in said in-line process; and

printing a coating over said colored ink images on said substrate using a flexographic process.

44. (four times amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for depositing a series of images on one side of a substrate in a continuous in-line process comprising;

a first flexographic printing station for printing a first liquid vehicle image on said substrate using a flexographic process;

a printing station subsequent to the first flexographic printing station comprising a first lithographic printing station for printing an image on said substrate;

a printing station subsequent to the first lithographic printing station comprising a second flexographic printing station for printing a second liquid vehicle image on said substrate using a flexographic process; and

a printing station subsequent to the second flexographic printing station comprising a second lithographic printing station for printing an image on said substrate;

whereby the second liquid vehicle image is printed on top of at least a portion of said image printed at the first lithographic printing station.

45. (three times amended) Apparatus as in claim 44 wherein at least one image printed at one of said flexographic printing stations is a coating material.

46. (three times amended) Apparatus as in claim 44 wherein at least one image printed at one of said lithographic printing stations is an ink.

58. (four times amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process, said printing stations including both lithographic and two flexographic printing stations;

a blanket cylinder at a first one of said flexographic printing stations;

a plate cylinder at a first one of said flexographic stations and a flexographic plate on said plate cylinder for receiving and transferring flexographic ink to said blanket cylinder;

a flexographic ink supply and an anilox roller associated with said flexographic ink supply for transferring flexographic ink to said flexographic plate and then to said blanket cylinder to form a first image on one side of a substrate;

a substrate for receiving said first image transferred from said blanket cylinder; and

at least one subsequent lithographic printing station in said in-line process for receiving said substrate and printing an additional colored ink image on said substrate on top of said first image.

82. (five times amended) A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

(1) providing a plurality of successive printing stations for depositing a series of images on a substrate in said in-line continuous process;

(2) utilizing an anilox roller to transfer a liquid ink as one of said series of images to a flexographic plate image at at least one of said printing stations;

(3) printing said liquid ink from said flexographic plate image to one side of said substrate;

(4) transferring said printed substrate with said liquid ink image to a subsequent printing station in said inline printing process;

(5) repeating steps (2)-(4) at subsequent printing stations in said in-line process to achieve a desired opacity ink image on the one side of said substrate; and

(6) printing an ink pattern on said substrate using an offset lithographic process.

153. (amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process, the successive printing stations including:

a first flexographic printing station for printing an image on the first side of the substrate using the flexographic process;

a first lithographic printing station, subsequent in the continuous in-line process to the first flexographic printing station, for printing an image on the substrate using the lithographic process;

a second flexographic printing station, subsequent in the continuous in-line process to the first lithographic printing station, for printing an image on the substrate using the flexographic process; and

a second lithographic printing station, subsequent in the continuous in-line process to the second flexographic printing station, for printing an image on the first side of the substrate using the lithographic process.

154. (amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process, the successive printing stations including:

a first flexographic printing station;

a first dryer, subsequent in the continuous in-line process to the first flexographic printing station;

a first lithographic printing station, subsequent in the continuous in-line process to the first dryer;

a second dryer, subsequent in the continuous in-line process to the first lithographic printing station;

a second flexographic printing station, subsequent in the continuous in-line process to the second dryer; and

a third dryer, subsequent in the continuous in-line process to the second flexographic printing station.

159. (new) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process, the successive printing stations including:

a first lithographic printing station;

a first flexographic printing station, subsequent in the continuous in-line process to the first lithographic printing station;

a first dryer, subsequent in the continuous in-line process to the first flexographic printing station;

a second lithographic printing station, subsequent in the continuous in-line process to the first dryer;

a second dryer, subsequent in the continuous in-line process to the second lithographic printing station;

a second flexographic printing station, subsequent in the continuous in-line process to the second dryer; and

a third dryer, subsequent in the continuous in-line process to the second flexographic printing station.

160. (new) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process, the successive printing stations including:

a first lithographic printing station;

a first dryer, subsequent in the continuous in-line process to the first lithographic printing station;

a first flexographic printing station, subsequent in the continuous in-line process to the first dryer;

a second dryer, subsequent in the continuous in-line process to the first flexographic printing station;

a second lithographic printing station, subsequent in the continuous in-line process to the second dryer;

a third dryer, subsequent in the continuous in-line process to the second lithographic printing station;

a second flexographic printing station, subsequent in the continuous in-line process to the third dryer; and

a fourth dryer, subsequent in the continuous in-line process to the second flexographic printing station.

161. (new) Apparatus for providing a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process, the successive printing stations comprising:

a first flexographic printing station for printing an image on said substrate using the flexographic process;

a first lithographic printing station, subsequent in the continuous in-line process to the first flexographic printing station, for printing an image on the substrate using the lithographic process; and

a dryer disposed between said printing stations for drying the image printed by said first flexographic printing station.

162. (new) The apparatus of Claim 161 including:

at least one further lithographic printing station, subsequent in the continuous in-line process to the first lithographic printing station, for printing images on said substrate using the lithographic process.

163. (new) The apparatus of Claim 162 including:

a dryer disposed between said first lithographic printing station and said further lithographic printing station for drying images printed on said substrate.

164. (new) The apparatus of Claim 163 including:

a second flexographic printing station, subsequent in the continuous in-line process to said further lithographic printing station for at least one of printing an image on said substrate and applying a coating on said substrate using the flexographic process.

STATUS OF CLAIMS

Claims 1 through 5 are previously patented claims, are pending in this application and are allowed.

Claim 6, previously patented, has been rejected and remains in this application currently amended.

Claims 7 and 8, previously patented, remain dependent on Claim 6 and have been rejected.

Claim 9, previously patented, remains in this application, has been previously amended and is rejected.

Claim 10 remains in this application, has been previously amended and has been rejected.

Claim 11 has been rejected and is currently amended.

Claims 12 through 14 are previously patented claims, are pending in this application and are allowed.

Claim 15 has been rejected and remains pending as amended herein.

Claims 16 and 17 remain pending in this application and have been rejected.

Claims 18 through 20, previously patented, depend from Claim 17, and have been rejected.

Claim 21 has been previously amended, remains pending and has been rejected.

Claims 22 and 23, previously patented, remain pending unamended and have been rejected.

Claims 24 and 25, previously patented, have been rejected and have been amended herein.

Claims 26 through 28, previously patented, remain pending unamended, and have been rejected.

Claim 29 has been rejected and has been amended herein.

Claim 30, dependent on Claim 29, remains unamended and has been rejected.

Claim 31 has been canceled.

Claims 32 through 34 have been rejected and have been amended herein.

Claims 35 and 36 have been rejected and remain in this application unamended.

Claim 37 has been previously amended and has been rejected.

Claim 38 has been rejected and has been amended herein.

Claims 39 through 41 are patented claims, are pending in this application and have been allowed.

Claims 42 and 43 have been canceled.

Claims 44 through 46 have been rejected and have been amended herein.

Claims 47 and 48 remain unamended and have been rejected.

Claims 49 through 57 have been canceled.

Claim 58 has been rejected and has been amended herein.

Claims 59 through 81 have been canceled.

Claim 82 has been amended herein and has been indicated as being allowable

Claims 83 and 84 remain depending from Claim 82, are unamended per this amendment and are indicated as being allowable.

Claims 85 through 151 have been canceled.

Claim 152 has been canceled.

Claim 153 has been rejected and has been amended herein.

Claim 154 has been rejected and has been amended herein.

Claim 155 has been canceled.

Claim 156 has been rejected and remains pending.

Claim 157 has been rejected and remains pending.

Claim 158 has been rejected and remains pending.

Claims 159 through 164 are newly presented in this amendment and are believed to be necessary to fairly protect the invention.